

A Novel Snake Restraint Device

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The restraint and immobilization of snakes without the use of chemicals have a variety of research and veterinary applications. These applications include scale counts, band counts, and delicate invasive procedures like blood or tissue sampling and introduction of an oral catheter. Techniques requiring secured snakes are usually accomplished by two handlers, one holding the snake and the other performing the procedure. A wide variety of snake restraint devices and techniques have been described. Some involve allowing snakes to crawl into transparent plastic tubes which are either flexible (Johansen 1959; Sutherland and Hampton 1961), or rigid (Presst 1971), or made of a series of rigid tubes with decreasing diameters (Murphy 1971). Noose or strap sticks frequently have been used (Bellairs 1967; Conant 1958; Fowler 1978; Gregory et al. 1989; Schmidt and Davis 1941) and have been combined with clear plastic tubing to form a "noose tube" (King and Duvall 1984). Many devices have involved using tape or Velcro strips to restrain snakes against flat boards (Ward and Harrell 1978) or wooden dowels (McDonald 1964), or in wooden troughs (Luck and Keebler 1929). Lidded buckets with notched lips have allowed the snake's posterior half to be handled while the head was restrained in the bucket (Gillingham et al. 1983), while plastic freezer containers with holes in the lid have also been used to hold a snake's head during handling (Freed and Freed 1983).

These methods have been useful in various circumstances, but they also have limitations. Some limit the handler's access to all parts of the snake, while others leave enough of the snake unrestrained that injury to the animal can occur as it struggles to escape. Many of these techniques require construction of the restraining device. Here we describe a device which can be purchased and used "off the shelf," and a method whereby a single individual can immobilize a snake in a straight position indefinitely.

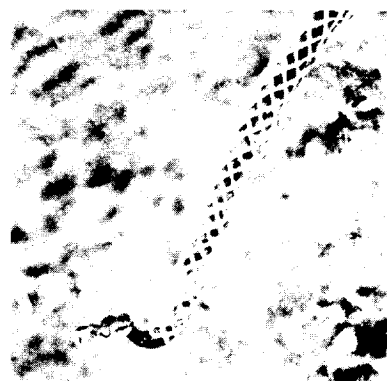


FIG. 1. An effectively immobilized California kingsnake (*Lampropeltis getula californiae*).

Wire mesh cable holders operate on the same principles as a finger puzzle, a tube of woven fiber which, when longitudinally compressed, allows the insertion of cylindrical objects. Subsequent longitudinal extension of the tube tightens the fibers around the object, preventing its withdrawal. Cable holders are available through electrical equipment suppliers and come in a variety of lengths and diameters. Compression of the ends of the cable holder toward the center maximizes the internal diameter for insertion of the snake. The handles of the cable holder are double-looped and easily spread at the time of insertion, although we find that modification of the handles by cutting the loops and putting caps on the wire ends increases the ease of operation. After the snake is advanced through the cable holder to the desired



FIG. 2. The effects of using a cable holder with too large diameter, allowing a brown tree snake (*Boiga irregularis*) too far beyond the end of the cable holder.

position, the cable holder is drawn to full length by pulling on the handles. This secures the snake in a rigid, straight position and permits it to be controlled by one person using one hand. The wide gaps of the mesh of the cable holders permit easy visual observations, such as scales counts, and invasive procedures, such as blood draws. Optimum immobilization and stability are achieved if the size of the internal diameter of the cable holder is selected correctly for the size of the snake (Figs. 1–2). The diameter of the snake should be slightly greater than the diameter of the tightened cable holder. We have successfully applied this device to a variety of species besides those in the figures, including bullsnake (*Pituophis melanoleucas*), corn snake (*Elaphe guttata*), Dumeril's boa (*Acrantophis dumerili*), and Haitian boa (*Epicrates striatus striatus*). We have not attempted to insert any dangerously venomous snakes into a cable holder, although once properly secured in a cable holder of appropriate size, manipulations should be easily conducted in a safe manner.

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